

REMARKS

In accordance with the foregoing, claim 12 has been amended and new claims 29 and 30 have been added. Claims 12-30 are pending and under consideration.

Claims 12-28 are rejected under 35 USC §103(a) as being obvious over US Patent Publication No. 2004/0146013 to Song et al. in view US Patent No. 6,549,543 to Shin.

The Examiner previously conveyed that Fig. 1 and the abstract relate to a path determination. However, Fig. 1 and the abstract do not disclose or teach that a path determination is performed or even that the document relates to such a determination. Fig. 1 simply indicates how the coverage area of a cell can be extended through the use of a repeater. The repeater increases the range of reach of a transmission from the access point. This can also be seen clearly from Fig. 10, whereby station 1050 is outside the coverage area 1020 of access point 1010. In order to increase the coverage of reception repeater 1030 is used which extends the coverage area 1040. Thus the station 1050 can communicate with the access point. Song et al. teaches that "one of the (repeater) antennas is preferably generally aimed at a network that is to be extended. The other antenna is preferably generally aimed at a device or other part of the network to which the extended coverage is brought." Song et al. teaches (§0037) that a "direction" for the transmission is somehow achieved, without necessarily determining anything. As long as the direction is "generally" correct then a data transmission will in general be received and control circuitry can then move the antenna inclinations for example in order to achieve a better receive power signal.

The fact that Song et al. discloses that the repeater can comprise a directional amplifier, directional antennas (§0015-0016) does not teach that a path is determined, i.e. that certain steps are taken prior to conveying information in order to set up the different links over which a data transfer is made. Although the claims are not limited to what is disclosed in the specification, a "path" indicates the physical or logical connections necessary between entities allowing for a data transmission to function between two end points. A "direction" as taught by Song et al. indicates the location relationship between entities from a particular entity to another. The Applicant understands that for Song et al., as long as a transmission is made from the access point "in the direction" of the repeater, this is fine, due to the fact that the antennas of the repeater will receive the transmission as they have been set up to aim in the right direction. For Song et al. no further actions are necessary, i.e. to determine the path (or route) over which data is to be transmitted.

With regard to “determining at least a portion of the path at a radio installation upon request of the first radio station,” Figs. 1 and 10 of Song et al. simply illustrate how a relay station can be placed within the cell area of an access point in order to increase the range of coverage. The reference does not teach determining at least a portion of the path a radio installation, let alone after a reception of a request for this determination to be effected from a first radio station. The disclosure of §0013, simply shows how the specific parts of the repeater mechanism work.

It can not be assumed that “a radio installation is any part of the radio system that determines the path” is taught by the feature of the “control circuitry” applying control signals to the switched directional amplifier in order to control the direction of transmissions. No path is determined between entities. The circuitry simply permits a received signal on one side to be transferred to the other side so that it can be transmitted. The fact that the circuitry is used to determine a direction (§0014) does not disclose that a path determination is made upon a request from a first radio station (see also discussion under point 1 relating to direction vs. path).

With regard to the claimed radio installation, based on the cited passage of Song et al., it appears that the Examiner assumes the repeater to be the radio installation. However, it is clearly taught by Song et al. (§0003) that a relay or repeater, is a system that receives, amplifies and re-transmits radio signals at a higher power level in order to extend a coverage area. A repeater does not perform other functions. Therefore, as Song et al. clearly teaches that a repeater can not be in a position to determine a path as that is not its function; the claimed feature is not disclosed. Switching between circuits for transmissions (i.e. received on one antenna thereafter transmitted on the other antenna) does not teach that a determination of a path is made by a radio installation.

To emphasize this point, claim 29 has been amended to clarify that it is the “radio installation” that assigns the sub-bands (§0024 of the present specification).

With regard to “transmitting path identification information from the radio installation to the first radio station,” paragraphs 0032-0037 of the present application provide antecedent basis. Although the claims are not limited to what is disclosed in the application, these paragraphs indicate how the path identification information is defined and how it is then provided to each station belonging to the determined path. They describe that the path information provided is in the form of a path number. According to these paragraphs, this can be seen as “routing” information that allows each station to know how to route the data from a start point to an end point.

The Examiner refers to §0014 for "transmitting path identification information from the radio installation to the first radio station." However, §0014, simply shows how the specific parts of the repeater mechanism work. The power detection unit may output power level signals that are utilized in determining the direction of transmission of the repeater, the control circuitry may output gain control signals; however, these signals do not disclose or even implicitly indicate that path identification is transmitted. §0044 clearly shows what these generated signals are used for and there is absolutely nothing in the disclosure stating that a path information is being transmitted, nor does it provide the suggestion that such a feature could be present or derivable from the teachings presented. Song et al. does not mention that some sort of path identification information is transmitted. It is therefore the Applicant's opinion that this feature is not disclosed in the cited document.

With regards to Shin, the Applicant is of the opinion that the MSC 50 determines a path based on whether the call is a voice call or a data call (column 5, lines 3-5) towards the core network (i.e. PSTN, X. 25, internet, LAN) as depicted in Figs. 3 and 4. Not the other way around. In the present invention, the radio installation determines the path that a transmission from a first radio station (e.g. a mobile station) needs to take in order to arrive at an access point in order to be able to get into the core. The present invention relates to the radio installation side of a radio communications network. There is no hint or teaching in Shin, that would suggest to a person skilled in the art, to apply such a path determination in the radio installation side. In Shin, a mobile station 20 is always directly connected to a base station 30 (Fig. 3) so it does not require any paths to be determined for it to gain access to the core network via an access point.

On March 26, 2010, the undersigned conducted an interview with Examiner Casca. The Examiner's time in preparing for and conducting the interview is acknowledged and gratefully appreciated.

During the interview, the differences between claimed invention and US Patent Publication No. 2004/0146013 to Song et al were discussed. The Examiner seemed to understand that the invention is different from this reference. The Examiner argued, however, that routing algorithms are well known. The Examiner cited the Bellman-Ford algorithm, which is described in a book Communications Network ISDN-0-07-242349-8. The algorithm was not reviewed in detail during the interview. However, Applicant argued that it appears to be related only to wired communication. The Examiner asserted that, with the Bellman-Ford algorithm, a gateway is often responsible for determining a route. Applicant argued that in a wired network, the gateway may understand the complete topology of the network, including billing differences

between different nodes. On the other hand, in a wireless network, the topology changes. Applicant argued that, in a wired network, the gateway would be on the communication path. On the other hand, with the claimed invention, the communications installation is not directly on the communication path.

During the interview, the differences between claims 12-28 and the cited references were discussed. In addition, new independent claim 29 was reviewed. Claim 29 clearly recites the relationship between the first radio station, the base station and the access point, which relationship is not suggested by the relied upon references.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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